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PATENT

S.N. 10/811,050

AMENDMENTS TO THE CLAIMS

Please amend the claims as shown below:

1.(Previously Presented) A method of forming a floating charge pump comprising:

configuring a charge pump controller to charge an output capacitor that is referenced to a high side of a first voltage supply wherein the first voltage supply has a first value;

configuring the charge pump controller to receive an operating voltage for operating the charge pump controller from a second voltage supply that is external to the charge pump controller and that has a second value wherein the charge pump controller is configured to derive a pump voltage to charge the output capacitor from the second voltage supply and wherein the second value of the second voltage supply is independent of the first voltage supply.

2.(Cancelled)

3.(Previously Presented) The method of claim 1 wherein configuring the charge pump controller to charge the output capacitor that is referenced to the high side of the first voltage supply includes coupling the output capacitor to charge to a voltage substantially equal to the pump voltage of the charge pump controller.

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4.(Previously Presented) The method of claim 1 further including coupling a pump capacitor to charge to a voltage substantially equal to the first value of the first voltage supply and to couple the pump voltage across the pump capacitor to the output capacitor of the floating charge pump.

5.(Previously Presented) The method of claim 1 further including configuring the charge pump controller to generate a series of pulses having a voltage swing equal to the pump voltage.

6.(Previously Presented) The method of claim 5 wherein configuring the charge pump controller to generate the series of pulses includes coupling the charge pump controller to generate a regulated voltage from the second voltage supply and to couple the regulated voltage to an output of the charge pump controller to generate the pump voltage.

7.(Cancelled)

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8.(Previously Presented) A floating charge pump circuit comprising:

an first input coupled to receive a first supply voltage having a voltage supply side and a voltage return side;

an output capacitor referenced to the voltage supply side of the first supply voltage;

a second supply voltage that is different from the first supply voltage; and

a charge pump controller coupled to receive the second supply voltage wherein the second supply voltage is external to the charge pump controller, the charge pump controller configured to use the second supply voltage to generate an operating supply of the charge pump controller and configured to form a pump voltage that is derived from the operating supply.

9.(Cancelled)

10.(Previously Presented) The floating charge pump circuit of claim 8 wherein the output capacitor referenced to the voltage supply side of the first supply voltage includes a first terminal of the output capacitor referenced to the voltage supply side of the first supply voltage and a second terminal coupled to receive the pump voltage from the charge pump controller.

11.(Previously Presented) The floating charge pump circuit of claim 8 further including a charge pump capacitor coupled to receive the pump voltage from the charge pump controller and to couple the pump voltage from the charge pump controller across the pump capacitor to the output capacitor, the charge pump capacitor having a first terminal and a second terminal.

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12.(Previously Presented) The floating charge pump circuit of claim 11 further including a first diode coupled to the first terminal of the charge pump capacitor and coupled to receive the first supply voltage.

13.(Previously Presented) The floating charge pump circuit of claim 12 further including the output capacitor having a first terminal coupled to receive the first supply voltage and a second terminal coupled to a second diode, the second diode coupled to the first terminal of the charge pump capacitor.

14.(Previously Presented) The floating charge pump circuit of claim 8 wherein the charge pump controller is coupled to receive the second supply voltage and responsively form a series of pulses having the pump voltage of the floating charge pump circuit.

15.(Previously Presented) The floating charge pump circuit of claim 14 wherein the charge pump controller is operably coupled to disable charging the output capacitor when the pump voltage of the floating charge pump circuit exceeds a protection value.

16.(Cancelled)

17.(Cancelled)

18.(Cancelled)

19.(Cancelled)

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20.(Previously Presented) The method of claim 1 wherein configuring the charge pump controller to receive the operating voltage for operating the charge pump controller from the second voltage supply includes configuring the charge pump controller to form a regulated voltage from the second voltage supply and form the pump voltage to be substantially equal to the regulated voltage.

21.(Previously Presented) The method of claim 1 wherein configuring the charge pump controller to receive the operating voltage for operating the charge pump controller from the second voltage supply that is external to the charge pump controller includes configuring the charge pump controller to form a drive signal that controls switching the output capacitor into a charging configuration during a first portion of the drive signal and that controls switching the output capacitor into a non-charging configuration during a second portion of the drive signal and that also couples the pump voltage from the drive signal to the output capacitor.

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22.(Previously Presented) The method of claim 1 wherein configuring the charge pump controller to receive the operating voltage for operating the charge pump controller from the second voltage supply that is external to the charge pump controller includes configuring the charge pump controller to form a drive signal that controls switching the output capacitor into a charging configuration during a first portion of the drive signal and that controls switching the output capacitor into a non-charging configuration during a second portion of the drive signal wherein the drive signal has a value that is substantially equal to the pump voltage during the first portion of the drive signal and the value of the drive signal controls coupling the value of the drive signal to the output capacitor during the first time period.

23.(Previously Presented) The floating charge pump circuit of claim 8 wherein the charge pump controller is configured to use the operating supply to form an oscillating signal that controls alternately coupling the output capacitor in a charging configuration and a non-charging configuration.